What is claimed is:

1. A polymer composition which comprises at least one at least semicrystalline polymer having no ionic groups and comprises at least one compound with plasticizing properties,
and which
comprises 0.1 to 30% by weight of ionic liquid as plasticizer.

2. The polymer composition as claimed in claim 1,
which
comprises from 0.5 to 25% by weight of ionic liquid.

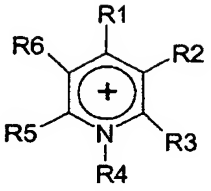
3. The polymer composition as claimed in claim 1 or 2,
which
comprises at least one thermoplastically processable polymer selected from the group of the (co)polyamides, (co)polyesters, polyurethanes, polyphenylene ethers, polyolefins, (co)polyether-amides, polyaramides, polyether(ether)ketones, and polyetheresteramides.

4. The polymer composition as claimed in at least one of claims 1 to 3,
which
comprises at least one crosslinked, or at least one crosslinkable, polymer selected from the group of the (co)polyamides, (co)polyesters, polyurethanes, and polyphenylene ethers.

5. The polymer composition as claimed in at least one of claims 1 to 4,
wherein
the polymer is linear or branched.

6. The polymer composition as claimed in at least one of claims 1 to 5,
which
comprises at least one polymer mixture and/or at least one polymer blend.

7. The polymer composition as claimed in at least one of claims 1 to 6,
wherein
the ionic liquid is a salt having a cation of the following structures



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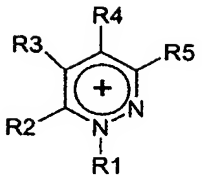

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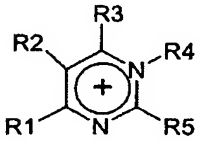

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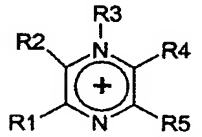

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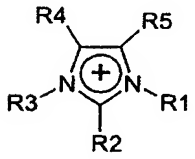

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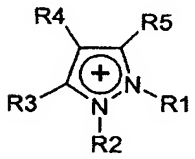

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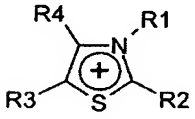

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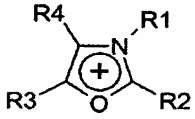

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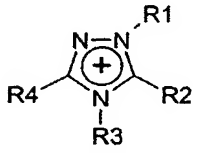

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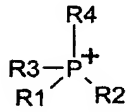

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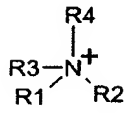

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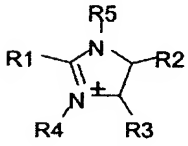

12

where R1, R2, R3, R4, R5, and R6 are identical or different and are hydrogen, a linear or branched aliphatic hydrocarbon radical having from 1 to 20 carbon atoms, a cycloaliphatic hydrocarbon radical having from 5 to 30 carbon atoms, an aromatic hydrocarbon radical having from 6 to 30 carbon atoms, an alkylaryl radical having from 7 to 40 carbon atoms, a linear or branched aliphatic hydrocarbon radical having from 2 to 20 carbon atoms and having interruption by one or more heteroatoms (oxygen, NH, NCH_3), or are a linear or branched aliphatic hydrocarbon radical having from 2 to 20 carbon atoms and having interruption by one or more functionalities

selected from the group -O-C(O)-, -(O)C-O-, NH-C(O)-, -(O)C-NH, $-(CH_3)N-C(O)-$, $-(O)C-N(CH_3)-$, $-S(O)_2-O-$, $-O-S(O)_2-$, $-S(O)_2-NH-$, $-NH-S(O)_2-$, $-S(O)_2-N(CH_3)-$, $-N(CH_3)-S(O)_2-$, or are a linear or branched aliphatic hydrocarbon radical having from 1 to 20 carbon atoms, terminally functionalized by -OH, $-NH_2$, or $-N(H)CH_3$, or are a polyether of formula $-(R^7-O)_n-R^8$ having block or random structure, where R^7 is a linear or branched hydrocarbon radical having from 2 to 4 carbon atoms, n = from 1 to 30, and R^8 is hydrogen, a linear or branched aliphatic hydrocarbon radical having from 1 to 20 carbon atoms, a cycloaliphatic hydrocarbon radical having from 5 to 30 carbon atoms, an aromatic hydrocarbon radical having from 6 to 30 carbon atoms, an alkylaryl radical having from 7 to 40 carbon atoms, or a $-C(O)-R^9$ radical, where R^9 is a linear or branched aliphatic hydrocarbon radical having from 1 to 20 carbon atoms, a cycloaliphatic hydrocarbon radical having from 5 to 30 carbon atoms, an aromatic hydrocarbon radical having from 6 to 30 carbon atoms, an alkylaryl radical having from 7 to 40 carbon atoms; and having an anion selected from the group consisting of halide, phosphate, halophosphates, alkylated phosphates, nitrate, sulfate, hydrogensulfate, alkyl sulfates, aryl sulfates, perfluorinated alkyl sulfates, perfluorinated aryl sulfates, sulfonate, alkylsulfonates, arylsulfonates, perfluorinated alkyl- and arylsulfonates, perchlorate, tetrachloroaluminate, tetrafluoroborate, alkylated borates, tosylate, saccharinate, alkyl carboxylates, and bis(perfluoroalkylsulfonyl)amide anions; or is a mixture of two or more of these salts.

8. The polymer composition as claimed in at least one of claims 1 to 7, wherein
the ionic liquid contains a halogen-free anion selected from the group consisting of phosphate, alkyl phosphates, nitrate, sulfate, alkyl sulfates, aryl sulfates, sulfonate, alkylsulfonates, arylsulfonates, alkyl borates, tosylate, saccharinate, and alkyl carboxylates.

9. The polymer composition as claimed in at least one of claims 1 to 8, wherein
the ionic liquid of the polymer composition contains various anions.

10. The polymer composition as claimed in at least one of claims 1 to 9, which
has microbicidal properties.

11. The polymer composition as claimed in at least one of claims 1 to 10,
which
has antistatic properties.

12. The polymer composition as claimed in at least one of claims 1 to 11,
which
has a glass transition temperature, measured by differential scanning calorimetry (DSC), which is lower by up to 18K than that of a polymer comprising no ionic liquid.

13. A process for preparing a polymer composition which comprises at least one polymer having no ionic groups and comprises at least one compound with plasticizing properties, where the polymer composition comprises from 0.1 to 30% by weight of ionic liquid as plasticizer,
which comprises
first bringing an ionic liquid into contact with a polymeric component of the polymer composition, and then dispersing the ionic liquid in the polymer composition.

14. The process as claimed in claim 13,
wherein
a polymer composition as claimed in any of claims 1 to 12 is prepared.

15. The process as claimed in claim 13 or 14,
wherein
the dispersion of the ionic liquid in the polymer composition takes place by means of a mixing process.

16. The process as claimed in at least one of claims 13 to 15,
wherein

the ionic liquid is brought into contact with, and thoroughly mixed with, a molten phase of the polymeric component.

17. The process as claimed in claim 16,
wherein
the mixing of the components of the polymer composition is carried out in a single- or twin-screw kneader, the polymeric component being molten.

18. The process as claimed in at least one of claims 13 to 15,
wherein
the ionic liquid is brought into contact with a solid phase of the polymeric component, and thoroughly mixed after melting.

19. The process as claimed in claim 13 or 14,
wherein
the dispersion of the ionic liquid in the polymer composition takes place by means of diffusion.

20. The process as claimed in claim 19,
wherein
the preparation takes place by means of impregnation of polymer powders by an ionic liquid.

21. The process as claimed in at least one of claims 13 to 15,
wherein
use is made of at least one polymer and/or one ionic liquid dissolved in a solvent.

22. The process as claimed in claim 21,
wherein
the solvent is removed by a thermal separation process from a precursor of the polymer composition.

23. The process as claimed in claim 21,
wherein
the solvent is removed from a precursor of the polymer composition by precipitation of the polymer composition.

24. The use of a polymer composition as claimed in any of claims 1 to 12, or of a polymer composition prepared by a process as claimed in any of claims 13 to 23, as hot-melt adhesive, adhesion promoter, binder, filler material, packaging material, compatibilizer for preparing polymer blends, agent modifying viscosity and/or solubility in polymer mixtures or polymer compositions, or for the production of unsupported films, supported films, coatings, membranes, or moldings, where shaping takes place by means of injection molding, extrusion, or blow molding.

25. A hot-melt adhesive comprising a polymer composition as claimed in at least one of claims 1 to 12, or comprising a polymer composition prepared by a process as claimed in any of claims 13 to 23.

26. A binder comprising a polymer composition as claimed in at least one of claims 1 to 12, or comprising a polymer composition prepared by a process as claimed in any of claims 13 to 23.

27. A sports product comprising a polymer composition as claimed in at least one of claims 1 to 12, or comprising a polymer composition prepared by a process as claimed in any of claims 13 to 23.